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REC - 2-26-92 S/M/023/022

Number: J-050-092-035 EA

Rancho Equipment Services, Limestone Quarry
Mine Plan of Operations, Environmental Assessment
DRAFT

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INTRODUCTION

Rancho Equipment Services has submitted a mine plan of operations for quarrying limestone. The quarry is situated on a small hill, approximately 3 miles south-southeast from the summit of Topaz Mountain. Topaz Mountain is the southernmost mountain in the Thomas Range and is located in Juab County, Utah. Exploration and mining activities were initiated on this site less than 1 year ago. Currently the total surface disturbance is about 5 acres. The limestone is produced for sale to the Intermountain Power Project (IPP) Generating Station near Delta, Utah. The generating station uses limestone in the preparation of a slurry for the scrubbers. In the scrubbers, the slurry functions to remove sulfur dioxide from the flue gas when burning coal.

The geologic unit being quarried belongs to the Garden City Formation. This unit is a member of the Pogonip Group and is lower-middle Ordovician in age. In outcrop the color is predominantly tan to gray, the texture ranges from being massive to that of an intraformational conglomerate, no fossil were noted at the quarry site. The limestone appears fairly clean and pure.

A. PURPOSE AND NEED

This Environmental Assessment (EA) is being prepared to address the environmental impacts of a mine plan of operations filed by Rancho Equipment Service. Rancho Equipment Service is leasing with an option to purchase mining claims Topaz Calcium #5, Topaz Calcium #7 and Topaz Calcium #8 from J. L. Shields of Delta. The quarry currently operates under a 43 CFR 3809 notice for surface disturbances under 5 acres. The proposed action is needed to allow for expansion of the existing quarry. A plan of operations was filed as required by surface management regulations 43 CFR 3809.1-4(a) for mining operations under the general mining laws, since the surface disturbance from the project will exceed five acres. Under these regulations the Bureau of Land Management (BLM) is required to prepare EAs on all Plans of Operations to determine if an Environmental Impact Statement is needed or if additional environmental mitigation, beyond that proposed by the mining claimant, is needed to prevent unnecessary and undue degradation of the public lands. Approval of this plan would be contingent upon Rancho Equipment Service securing an appropriate reclamation bond with the State of Utah.

B. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Suitable areas for alternate locations of the mining operation may exist in this locality. However, due to IPP's specifications for chemical composition of the limestone received, to find a substitute location would require an exploration program involving drilling accompanied by down hole assays. Presently the quarry has disturbed almost five acres of land. At this time relocation of the quarry appears to be impractical and might unnecessarily disturb other pristine land.

In the No Action Alternative the amendment to the Plan of Operations would be rejected. The BLM may not absolutely forbid mining of, or totally bar access to, a valid mining claim (Southwest Resource Council, 96 IBLA 105, 120

(1987)). In order to accept the No Action Alternative, BLM would have to show that the claims proposed for mining are not valid and contest the claims.

If the No Action Alternative is accepted, the proposed plan of operations would be rejected. Rancho Equipment Service would be required to confine the surface disturbance associated with their mining operation to under five acres. In addition, any subsequent expansion of activities would be dependent on the successful reclamation of an equal or greater area of land disturbed under their present notice of intent. If this alternative is adopted only the equipment and facilities described in their present notice of intent would be allowed for use in their mining operation.

1. Location

The proposed action is located in the SW 1/4 and SE 1/4 of Section 21 and the NE/4 of Section 28 in T. 13 S., R. 11 W., in Juab County, Utah. This location is approximately 35 miles northwest of the town of Delta. Access to the property is facilitated via the "Brush-Wellman" highway, a paved road that originates on Highway 50-6, about 10 miles northeast of Delta. Alternatively the property may be reached using the Weiss Highway, a gravel road west of Jericho Junction or from Faust by the Old Pony Express and Stage Route, then south through Dugway Valley.

The mining claims involved in the proposed action are Topaz Calcium #5, Topaz Calcium #7 and Topaz Calcium #8 (UMC serial numbers, 343278, 343280 and 343281 respectively). Each of these placer mining claims encompasses one quarter section (160 acres). The Topaz Calcium claim group was filed on February 25, 1991, by J. L. Shields, May C. Shields, Mckay Shields, Kelley Shields, Warren Monroe, Shelly Monroe, Gerald Miller, and Candice Miller. Attachment A shows the location of the proposed action and Attachment B shows the location of the mining claims.

2. Mining History

On April 4, 1991, the BLM received a plan of operations from Rancho Equipment Service for quarrying limestone from the above location. The plan was assigned case file number UT-054-91-01P. A deficiency letter was sent in reply to the company, requesting information sufficient to describe or identify the type of operation proposed, how it would be conducted, measures to be taken to prevent unnecessary or undue degradation, and measures to be taken to reclaim disturbed areas resulting from the proposed operations. Further correspondence referencing this plan was not received by the BLM.

Rancho Equipment Service submitted a notice to the BLM on April 4, 1991 for exploratory drilling. They proposed 30 reverse circulation holes on claims Topaz Calcium #7 and Topaz Calcium #8. This notice was accepted and assigned case file number UT-054-91-04N.

The Utah Division of Oil Gas and Mining (UDOGM) forwarded the BLM, a notice of intention to commence small scale mining operation, submitted by Rancho Equipment Service to UDOGM for quarrying limestone on claims Topaz Calcium #7 and Topaz Calcium #8. This notice was received by the BLM on May 7, 1991, and

was assigned case file number UT-054-91-06N, the previous notice UT-054-91-04N was closed and administratively combined with this new case file.

A surface compliance inspection was conducted at the quarry by the BLM on July 24, 1991. During the inspection a survey was carried out over the site, using a topofil and compass. The results of this survey indicated at that time the total active acreage of disturbance under their notice was approximately 4.6 acres. Rancho Equipment Service was subsequently notified that they were approaching the 5 acre limit for operations conducted under a notice. They were advised, if they intended to expand their mining operation and remain in compliance with 43 CFR 3809.1-4, they would be required to file a plan of operations for their mining activities. The plan of operations was received at the Bureau of Land Management, House Range Resource Area office in Fillmore on November 18, 1991, and is the subject of this EA.

3. Plan of Operations

Rancho Equipment Service has proposed to expand their quarry operation to encompass up to 16 acres of surface disturbance. They propose to mine 60,000 to 100,000 tons of finished limestone product per year. The mine life should extend from 4 to 8 years, based on contract sales for limestone. The quarry could remain active up until the hill is reduced to a topographic flat. The mine plan does not propose to remove material below the elevation of the valley floor (approximately 5,300 feet MSL). Reserves estimates submitted by the company are 21.7 million tons of limestone for claims Topaz Calcium #7 and Topaz Calcium #8. This figure is a maximum and represents "above-lay-of-land" only. No quantities were calculated for reserves below the valley floor. The grade (percent calcium) of limestone was not confirmed prior to the reserve estimate. The estimate is for total volume and does not differentiate between low and high grade limestone. Drill results indicate the local distribution of ore grade limestone in this formation is variable. The exact location of the quarry was determined by exploratory drilling. Minor road improvement is proposed on claim Topaz Calcium #5. Approval of their mine plan would allow them to expand the quarry beyond 5 acres.

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Under Rancho Equipment Service's present notice, mining operations are taking place in the same manner as proposed in their plan of operations. One significant revision to their notice was made. In the notice it is stated, they intended to sell waste material for road base. This was not allowed. It is the BLM's position that material being mined, when authorized under 43 CFR 3809, cannot be disposed of as common variety material (road base). Disposal of common variety material under these circumstances would be in violation of the following laws: Material Act of July 31, 1947 (61 Stat. 681, 30 U.S.C. 601); Act of July 23, 1955; Public Law (69 Stat. 367, 30 U.S.C. 612) and the following regulation: 43 CFR 3603.1 Unauthorized Removal of Mineral Materials (see 43 CFR 9239).

Operation and reclamation practices specified by the Utah Division of Oil, Gas and Mining for Rancho's notice are listed below. These practices are designed to keep the area clean and safe, minimize hazards to public safety, return the land to a useful condition, and insure reestablish of at least 70 percent of the premining vegetative ground cover. To accomplish this, the operator would

DOGM SMO RECLAMATION GUIDELINES

need to perform reclamation concurrently, or at the completion (within one (1) year) of mining:

a. Keep the mining operation in a safe, clean, and environmentally stable condition.

b. Permanently seal all shafts and tunnels to prevent unauthorized or accidental entry.

c. Plug drill holes with a five foot cement surface plug. Holes that encounter fluids are to be plugged in the subsurface to prevent aquifer contamination.

d. Construct berms, fences, or barriers, when needed, above highwalls and excavations.

e. Remove, isolate, or neutralize all toxic materials in a manner compatible with federal and state regulations.

f. Remove all waste or debris from stream channels.

g. Dispose of any trash, scrap metal, wood, machinery, and buildings.

h. Conduct mining activities so as to minimize erosion and control sediment.

i. Reclaim all roads that are not part of a permanent transportation system.

j. Stockpile topsoil and suitable overburden prior to mining.

k. Stabilize highwalls by backfilling or rounding to 45 degrees or less, where feasible; reshape the land to near its original contour, and redistribute the topsoil and suitable overburden.

l. Properly prepare seedbed to a depth of six inches by ripping, discing, or harrowing.

m. Reseed disturbed areas with adaptable species.

n. Plant the seed with a rangeland or farm drill, or if broadcast seeded, harrow or rake the seed 1/4-1/2 inch into the soil - fall is the preferred time to seed.

Rancho Equipment Service proposes to use the equipment listed below:

a. One Caterpillar D-9 bulldozer.

b. Two Caterpillar 966 front-end loaders.

c. One Kobel Company 4230 single jaw crusher.

d. One Thunderbird Model 4230 JVDH crushing plant.

e. Two 60 foot stacking conveyors.

f. One Clement 20 yard belly dump trailer.

g. One Clement 12 yard belly dump pup trailer.

h. One Kenworth semi-truck.

i. One Caterpillar 800 Kilowatt diesel generator with trailer.

j. One 1300 gallon diesel storage tank on skids.

Equipment may be subject to substitution with similar equipment that would perform the same functions.

In the plan of operations it is proposed quarrying would be done on benches with 25 foot highwalls, the width of the benches would vary from 12.5 feet to over 100 feet. Topsoil would be stripped with a bulldozer and saved in 4 stock piles located near the perimeter of the proposed quarry site (see Attachment C). The depth of topsoil ranges between 2 inches on the hill top and 12 inches on the valley floor. There is no overburden other than the topsoil. The proposed topsoil stockpile/staging platform located in the southeast corner of the quarry site would not be permitted. Under the notice, some of the stockpiled topsoil has been used to form a platform foundation for the processing plant. Under the plan, this topsoil would be isolated immediately east of its present position and stabilized by vegetative growth. The topsoil used in the foundation or staging platform would be replaced with waste (fines) material at the earliest possible opportunity.

Mining would be accomplished by drilling blast holes (6 7/8 inches by 25 feet deep), filling the holes with a mix of ammonium nitrate and fuel oil (ANFO), and detonating the charge. Each blast would affect an area of approximately 3,000 square feet. Blasting would be scheduled as needed to supply limestone to the processing plant.

After each blast, the loose material would be pushed with a bulldozer to a limestone stockpile located next to the crushers. The material would be loaded into the single jaw crusher with a front-end loader. From the single jaw crusher the material would be conveyed to the crushing plant. The crushing plant would complete breaking down the limestone and screen the material to separate the finished product from the waste. Both the finished product and the waste would be transported and stockpiled adjacent to the processing plant using separate stacking conveyors (see Attachment C). Any subsequent redistribution of stockpiled waste would be accomplished with the bulldozer. The finished product would be removed and loaded with the front-end loader into a 20 yard belly dump trailer and a 12 yard belly dump pup pulled by a semi-truck. The product would be hauled to the place of sale. A map of the proposed quarry site, stockpiles and processing facilities is included as Attachment C.

It is proposed that 2500 tons of limestone will be crushed each day, of which approximately 60% would be finished product and 40% waste. The processing plant would be able to produce 100,000 tons of finished product in approximately 67 working days and would operate periodically, primarily during spring, summer and fall months. After stockpiling up to 1 years worth of finished product the processing plant, stackers and generator would be temporarily removed from the site. The other heavy equipment listed above would remain throughout the year to load and transport material. Periods of non-operation are not anticipated. No person would reside on the claims, either temporarily or permanently, and there would be no buildings on the claims. No use, storage, transport, generation or disposal of hazardous materials is proposed in the plan of operations.

The following road construction is proposed for the development of the quarry.

a. Grade 2500 feet of 20 foot wide haul road over a pre-existing two track, commencing at the quarry site and ending at the Brush Wellman Highway.

b. Install 5 culverts with 12 inch diameters at the following locations.

(1) Where the haul road intersects the Brush Wellman Highway to permit for the passage of rain water draining off of the highway.

(2) Along the haul road, in a wash, approximately 100 yards north of the proposed culvert listed above (location b.(1)).

(3) Where the haul road intersects the Weiss Highway to permit for the passage of rain water draining off of the highway.

(4) Where the entrance to the access and truck loading area intersects the Weiss Highway to permit for the passage of rain water draining off of the highway.

(5) Where the exit from the access and truck loading area intersects the Weiss Highway to permit for the passage of rain water draining off of the highway.

It is proposed that 30 rotary drill holes of 6 inches in diameter be drilled to a maximum depth of 100 feet each. The drilling is proposed to facilitate exploration and development of the deposit. The drilling would occur on claims Topaz Calcium #7 and Topaz Calcium #8.
SW/4 SEC 21 SE/4 SEC 21

Rancho Equipment Service has proposed to keep all areas in a safe, clean, and environmentally stable condition, to conduct activities so as to minimize erosion, control sediment and to stockpile topsoil before making excavations.

Reclamation as proposed by the company would begin at the completion of mining. The company intends to mine limestone from the quarry until the

WHAT IF MINING CEASES PRIOR TO THIS, LEAVING A HIGHWALL?

TOPAZ V. / LIMESTONE DRAFT EA

ESTIMATED VOLUME OR DEPTH, AND SIZE COMPOSITION?

quarry site is reduced to a topographic flat. Afterwards the waste material (fines) would be distributed over the quarry site as a base for the topsoil. The topsoil would be spread over the waste material and prepared for seeding. Seeding of disturbed areas would be completed as specified by the BLM.

The areas and associated acreage proposed for disturbance under the plan of operations are itemized below:

Area disturbed		Acres
a.	Quarry site	7.2
b.	Finished product stockpile	1.6
c.	Waste stockpile	1.6
d.	Access and truckloading	1.0
e.	Three topsoil stockpiles	0.8
f.	Process plant platform/topsoil stockpile	0.3
g.	Fuel, equipment storage, and storage	0.2
h.	Haul road	1.1
i.	Exploratory drilling	2.0
	Total Acres =	15.8

C. AFFECTED ENVIRONMENT

1. General Setting

Rancho Equipment Services limestone quarry is situated on a small hill, about 3 miles south-southeast from the summit of Topaz Mountain. Topaz Mountain is the southernmost mountain in the Thomas Range. This is within The Great Basin physiographic province and is part of The Thomas Range-Tintic Mountains physiographic section (Stokes, W.L., 1986). The Thomas Range is about 15 miles long and 5-8 miles wide. It trends northwesterly and has the appearance of a dissected plateau. The highest elevations are attained along the eastern side of the range, with Topaz Mountain reaching an elevation of 7046 feet. The valley flat surrounding the Thomas Range varies from approximately 5,000 to 5,500 feet in elevation.

The stratigraphy in the Thomas Range is composed of Cambrian to Recent deposits. A major unconformity exists, beginning in the Mississippian and extending to Tertiary times. Paleozoic sedimentary rocks have been divided into 26 formations and have a total thickness of approximately 30,000 feet (Hintze, L.F., 1973). Sedimentary rocks consist of quartzites, limestones, dolomites, sandstones, and shales. These paleozoic strike north-northeast and dip at moderate angles to the west (Staatz, M.H., and Carr, W.J., 1964). Overlying the Paleozoic rocks in this area are a series of volcanic rocks ranging from Eocene to Pliocene in age. These volcanic rocks emanated from the Thomas Caldera and are divided into three main groups composed of rhyodacite quartz latite (42-39 m.y.a.), rhyolite (38-32 m.y.a.) and alkali rhyolite (21 & 7-6 m.y.a.) (Lindsey D.A., 1982). The most recent episode of volcanism was contemporaneous with basin and range faulting. Surface deposits are predominantly exposed rock and colluvial at elevations over 5,500 ft. Below this elevation surface sediments are primarily Quaternary lacustrine, laid down during the various stages of Lake Bonneville.

2. Affected Resources

a. Atmospheric Resources

The air quality is generally good. Under certain conditions, fugitive dust can generate local air quality problems. This generally occurs during dry, windy weather near unimproved and gravel roads. Annual precipitation averages 5 to 10 inches with about 30% occurring as snow. The temperature ranges between - 20° and 105° Fahrenheit.

b. Topography

Rancho Equipment Services limestone quarry is situated on a small hill, about 3 miles south-southeast from the summit of Topaz Mountain. The valley flat at this location is about 5,400 feet in elevation and the hill reaches approximately 140 feet above the valley flat. Local relief is moderate and may attain over 1,000 feet. The topography is dominated by the Tertiary volcanics that comprise the Thomas Range. Regional relief is as much as 5,000 feet.

c. Water Resources

There is no perennial surface waters near the quarry. Local drainages are ephemeral and small surface ponds exist only during periods of heavy precipitation. Natural springs do not occur in the vicinity, the closest spring is found over 5 miles south of the quarry site. This spring is neighbored by a well located about 1 mile southeast of the spring. This is the closest known well to the quarry site. Drainages within the Great Basin are closed and runoff water is contained in local catchments. The depth of the local water table at the quarry site is unknown.

d. Soils

Soils at this location reflect the parent rock type and are in the process of being formally mapped. They are generally light gray to pale brown, alkaline, gravelly loams and sandy loams.

On the hill that contains the quarry, soils are 2 inches deep near the crest to 12 inches deep near the base. These soils are colluvial in origin and include abundant stones. They are presumed to be Amtoft-Lodar Family soils, which are shallow to very shallow, well drained, and derived dominantly from the erosion of carbonate rocks.

Alluvial fans and valley floors contain soils that are very deep and well drained. The surface layer is loam or sandy loam which is gravelly or very gravelly in most places. The subsoil is gravelly and very gravelly with loam and sandy loam textures.

e. Vegetation

No threatened, endangered or sensitive plants have been located near the proposed project area. The vegetation in at this location is salt desert shrub. The composition (by cover) is approximately 60% grasses (Indian ricegrass, Oryzopsis hymenoides, curly grass Hilaria jamesii, and three awn Aristida longiseta), 39% desert shrubs (black sagebrush, Artemisia nova, shadscale, Atriplex confertifolia, Morman tea, Ephedra nevadensis, Winterfat, Eurotia lanata, and budsage, Artemisia spinescens) the remaining vegetation consists of forbs (Penstemon spp.) and cacti (prickly pear, Oppuntchia spp.). Attachment D is the Threatened, Endangered, and Sensitive Plant Clearance.

f. Wildlife Resources

No threatened, endangered, or sensitive animal species are known to reside near the quarry. Bald eagles (endangered) winter in the project area. Peregrine falcons (endangered) occasionally migrate through the area. Ferruginous hawks (Category 2) and Swainson's hawks (Category 2) may nest and hunt in the area. Golden eagles (sensitive) and mountain bluebirds (sensitive) occur year round and nest in the area. No known raptor nests are currently located within or near the mine area.

Other common species of wildlife occurring in the area include pronghorn antelope, mule deer, coyote, kit fox, badger, black-tailed jackrabbit, desert cottontail, chukar, prairie falcon, red-tailed hawk, rough-legged hawk, burrowing owl, mourning dove, horned lark, loggerhead shrike, common raven, gopher snake, Great Basin rattlesnake, and various lizards. The project area is within a "limited value antelope habitat range" and is not within any "wild life critical habitat or high priority habitat ranges". Attachment E is the Threatened, Endangered, and Sensitive Animal Clearance.

g. Wild Horse

The project area is not within the crucial habitat for wild horses or a designated herd management area.

h. Visual Resource Management

The project area is within Visual Resource Management Class IV. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the landscape can be high. These activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of line, form, color and texture.

i. Archeological Resources

There are no known archeological sites or resources in the area proposed for disturbance. A cultural resource inventory was completed on January 23, 1992. The report of this inventory is shown as Attachment F.

j. Wilderness Resources

None of the land proposed for disturbance is inside or in proximity to a Wilderness Study Area.

k. Recreation

Excellent quality of recreation is offered by rock and mineral collecting around Topaz Mountain. Specimen quality minerals include topaz, garnet, pseudobrookite, bixbyite, and red beryl. Other collectable minerals found in the vicinity include specular hematite, opal, agate, chalcedony and obsidian. At this location, 1600 acres of land have been segregated from entry or location under the general mining laws, subject to valid existing rights ((U-4342) Notice of Modification of Classification of Public Lands for Multiple-Use Management). This tract of land has been designated as the Topaz Mountain Special Recreation Management Area. The land proposed for disturbance is located approximately 1 mile south of this tract.

Other recreational activities include hunting, hiking/backpacking, sightseeing (geological, botanical, and zoological), horseback riding and off road vehicle use. The general lack of water may diminish the quality of some of these activities.

l. Land Use

Exploration and preliminary work necessary for the development of the quarry has taken place during the last year. This area has traditionally been used for livestock grazing, dispersed recreation, hunting and as wildlife habitat.

m. Livestock Grazing

The area proposed for mining is within the East Topaz Grazing Allotment. The East Topaz Allotment contains 29,126 acres of federal land. It has a current period of use from December 11 through May 31 and is used by sheep. The active preference is 2,348 Animal Unit Months (AUMs). An AUM is the equivalent of grazing 5 sheep for one month. The average actual use for this allotment is 1,340 AUMs. The allotment has been identified in the House Range RMP for monitoring and/or adjustment of livestock numbers. Overall, the allotment has 12 acres per active preference AUM and 22 acres per average actual use AUM.

D. ENVIRONMENTAL CONSEQUENCES

1. Proposed Action

a. Environmental Impacts

(1). Atmospheric Resources

There would be some fugitive dust emitted during the operation. There would also be some emissions from equipment and vehicles used during the operation.

(2). Topography

The topography at the site of the quarry would be permanently altered, although it should retain a natural appearance. At the end of the proposed operation, the hill that contains the quarry would be reduced to essentially a level surface. The waste from the quarry would be distributed over the site prior to restoring the topsoil. This should result in a topographic high that would remain at the completion of reclamation.

(3). Water Resources

There would be no impacts to water resources as a result of the proposed development activities.

(4). Soils

There would be minor impacts to soils. The soils at the location of the mine would be disturbed. The productivity of the soil would be reduced until all reclamation activities are successfully completed.

(5). Vegetation

Mining would disturb vegetation, this vegetation would be lost for the life of the project. Reclamation should successfully re-establish plants that are similar to the plants of the undisturbed site. Grasses would probably dominate the reclaimed community for a period of time until shrubs could successfully establish. Species composition of the disturbed area may not return to the undisturbed condition for as many as ten years after the end of mining.

(6). Wildlife Resources

Wildlife would be displaced from the project area for the life of the mining activity. Increased human activity and vehicular traffic may increase the incidence of road kill and impede the movement of wildlife across the Brush Wellman Highway. This disturbance should be temporary and wildlife should return to the site after reclamation is complete.

(7). Wild Horse

There would be no impact on wild horses as a result of the proposed development activities.

(8). Visual Resource Management

There would be some temporary adverse impacts on visual resources. The quarry is visible for a distance of several miles in some locations when not obscured by topographic land forms. The light colored soils and exposed bedrock is in contrast with the dominant surface tones of browns and grays. Following reclamation visual contrast would be reduced considerably, although it would not become substantially unnoticeable until the vegetative cover returns to the original species composition.

(9). Archeological Resources

There would be no impacts to archeological resources as a result of the proposed development. If an archeological resource is encountered during operations, Rancho Equipment Services is required to cease any operation which may effect this resource and notify the BLM (43 CFR 3809.2-2(e)).

(9). Wilderness Resources

There would be no impacts to wilderness resources as a result of the proposed development activities.

(10). Recreation

There would be no adverse impacts to recreation as a result of the proposed development.

(11). Land Use

There would be no adverse impacts to land use as a result of the proposed development.

(12). Livestock Grazing

There would be little impact to livestock grazing as a result of the proposed action. Approximately 16 acres of land would be temporarily lost for livestock grazing. This equals 0.055% of the total acreage in the allotment and represents a loss of approximately 1 AUM.

(13). Critical Elements

The following critical elements are not affected by the proposed action: Air Quality, ACECs, farmlands prime/unique, floodplains, native american religious concerns, wastes hazardous/solid, water quality, wetlands/riparian zones, wild & scenic rivers.

RECLAMATION SPECS.

b. Mitigating Measures

Should the decision be made to approve the proposed action the following mitigating measures should be included as conditions of approval:

(1). All equipment will be removed from the mine area at the end of mine life or as soon as practical if no longer needed for mine operation. Reclamation activities should be conducted contemporaneously with mining to the greatest extent that this is practical. All topsoil will be salvaged for use in reclamation. The quarry area will be recontoured to approximate the original contour. No final slope shall exceed 3 horizontal: 1 vertical. The topsoil will be spread over the disturbed area and the following seed mixture will be drilled at the rate of twelve (12) pounds per acre, "Certified" pure live seed.

SEED MIXTURE TO BE DRILLED		lbs/acre
Indian Ricegrass	Oryzopsis hymenoides	2
Great Basin Wildrye	Elymus cinereus	1
Winterfat	Eurotia lanata	2
Black Sagebrush	Artemisia nova	1
Forage Kochia	Kochia prostrata	1

If it is not possible to drill the seed because of slope limitations, then the seed can be broadcast. If the seed is broadcast, then the application rate will be doubled. After broadcasting, the land will be lightly harrowed to bed the seeds.

In addition to the above seed mixture, the seed mixture below will not pass through a drill and may be seeded with a dribbler in conjunction with drilling or may be broadcast.

SEED MIXTURE		lbs/acre
Shadscale	Atriplex confertifolia	2
Fourwing Saltbush	Atriplex canescens	3

(2). All roads, not pre-existing, and compacted lands in and around the compound, such as parking lots and truck loading areas, will be ripped to a depth of not less than six inches, disked and seeded as specified above in mitigation 1 (D.1.b.(1).).

(3). Construct berms, fences, or barriers, above highwalls and excavations.

NO HIGHWALL AT FINAL RECLA. ∴ ⇒ DURING OPERATIONS

(4). Water bars will be appropriately placed on reclaimed land where slopes exceed a 10% grade.

(5). All solid waste, except for overburden and subeconomic ore, will be removed from the site and taken to an authorized landfill. No burial or burning of trash will be allowed in the area of operations.

(6). Any petroleum products stored on or above the ground will have a berm placed around the storage area to contain potential spills. No waste oil or other petroleum products will be disposed of on the project area. All waste oil will be properly contained and removed to an authorized waste oil disposal site. If any petroleum products are spilled, the operator must immediately contain the spill, remove and dispose of the substance spilled and all contaminated soil in an authorized disposal site.

(7). Human waste will be contained in a chemical toilet or a septic system that is approved by the appropriate state or county official.

(8). Excessive dust shall be controlled by water or a dust suppressant at the mine site and on roads as needed or required by the Authorized Officer. If required, dust from the crushing operation will be suppressed by waterspray.

(9). After a period of nonoperation, if a raptor nest is found in the exploration area, the operator shall notify the Authorized Officer of the Bureau of Land Management within 96 hours before resuming exploration activities. Bureau staff shall within 96 hours inspect the site and consultation with Fish and Wildlife Service may be required under Section 7 of the Endangered Species Act.

(10). All drill holes will be plugged as soon as practical and not left unplugged for more than thirty (30) days without approval from BLM and UDOGM. All drill holes will be plugged, sealed or capped in a manner consistent with UDOGM regulations.

(11). The operator will not restrict access through the claims associated with this plan by the general public. No gates or barricades will be placed on any access by the operator.

(12). Approval of this Plan of Operations will not now, nor in the future, serve as a determination of the validity nor ownership of any mining claim included under this Plan of Operations.

c. Residual Impacts

Some fugitive dust and equipment exhaust emission would still occur after mitigation. The mineral materials removed from the site during mining would be irretrievably committed. There would be a temporary loss of forage and wildlife habit.

E. Consultation and Coordination

The staff of the House Range Resource Area.
D. Wayne Hedberg, Utah Department of Oil, Gas and Mining.
Ron Day, Rancho Equipment Services, Delta, Utah.
Robert Thomas, Rancho Equipment Services, Delta, Utah.

F. References

Hintze, L.F., 1973, Geologic History of Utah: Brigham Young University, Geologic Studies, V. 20, Pt. 3, 181 p.

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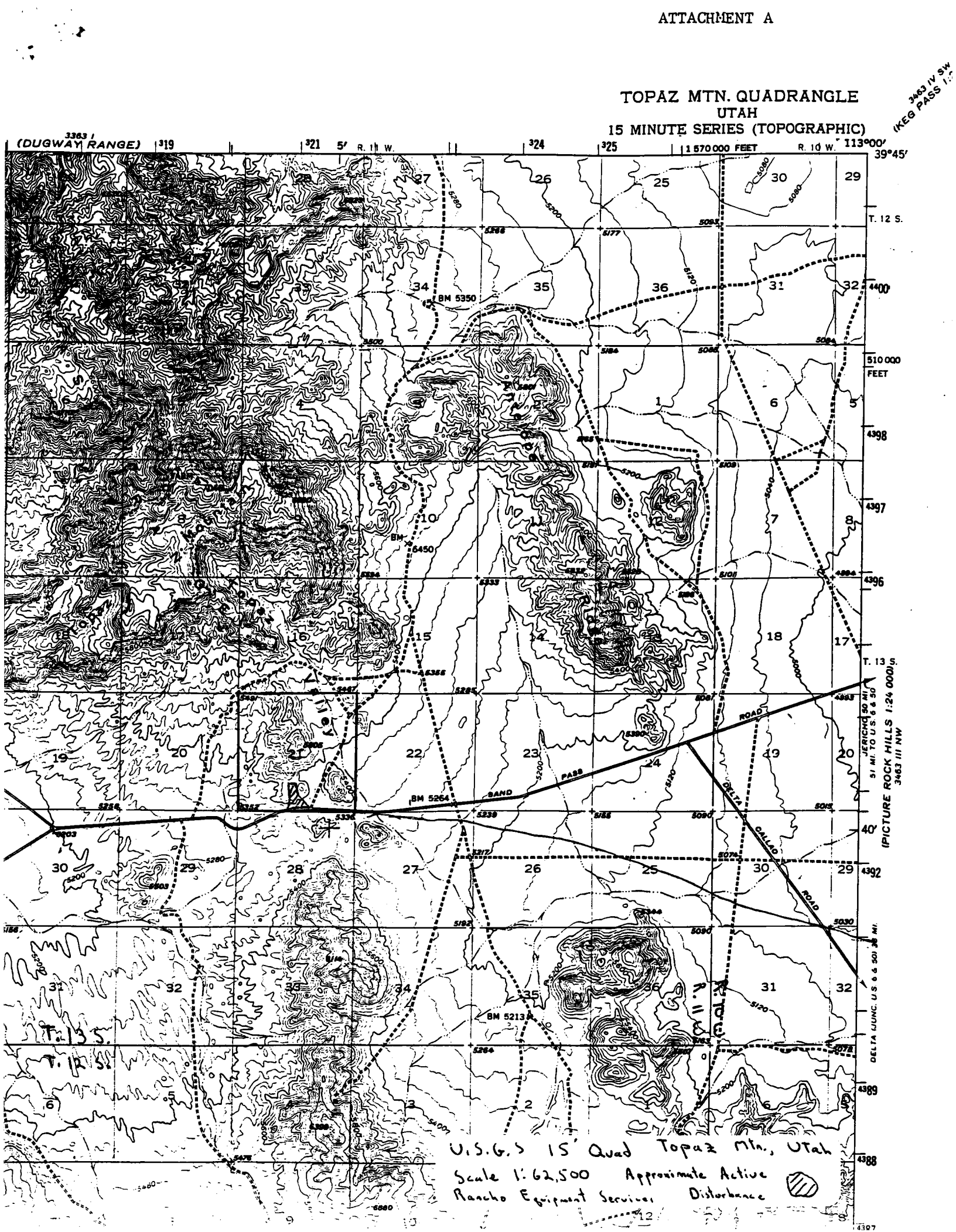
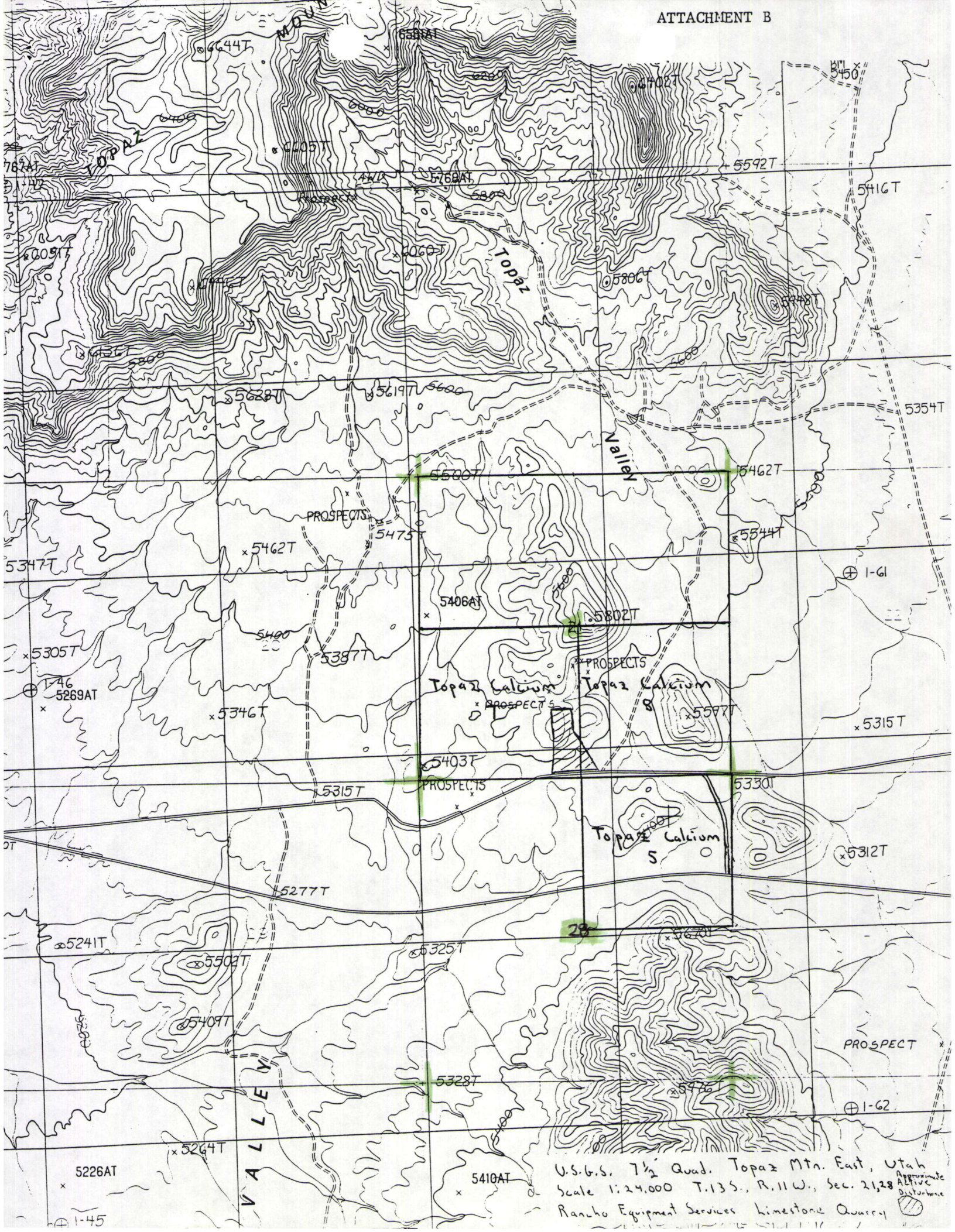
ATTACHMENT A



ATTACHMENT B



ATTACHMENT C